hole, from an inwardly facing side of the end wall, the flange supporting the urging member from the inwardly facing side, wherein the urging member is disposed between the flange and the bearing.--

## REMARKS

Claims 1-11 remain pending in this application for which applicants seek reconsideration.

### Amendment

The title has been amended to parallel the claimed invention. Applicants propose amending Figs. 1 and 3 to remove the non-English words, to include the depth reference $D_1$ and $D_2$, and to include the "Prior Art" legend in Fig. 3. The specification now incorporates the examiner's correction to remove one minor informality. The specification further has been amended to improve its form by including the depth reference $D_1$ and $D_2$, and more clearly describe the "housing inward side" and "housing-inward-side side surface." Claims 1-11 have been amended to improve their form and clarity. Claims 1-11 also adopt the examiner's suggestions for removing minor informalities contain in the claims. The changes made to the claims are to improve their form in light of the § 112 rejection, not to further distinguish over prior art or narrow the scope of the claims. No new matter has been introduced.

### Drawing Objection

The examiner objected to the drawings under numerous grounds. First, the examiner objected to the drawings under Rule 83(a) because the drawings do not show the relative depth difference of the mounting holes. Second, the examiner objected to the drawings because they contain non-English markings. Third, Fig. 3 lacks a "Prior Art" designation.

Applicants submit that the drawing objections have been fully obviated. First, as to the Rule 83(a) objection, applicants traverse because Fig. 1 clearly shows the relative depth

difference of the mounting holes. Nonetheless, for clarity, applicants propose amending Fig. 1 to include the depth designations $D_1$ and $D_2$. As Fig. 1 illustrates, $D_2$ has a longer depth than $D_1$. Moreover, applicants submit that relative dimensions need not be accurately illustrated since the drawings are not required to be in scale. Second, applicants propose removing the non-English markings from Fig. 1. Third, applicants propose adding the legend "Prior Art" in Fig. 3.

Applicants therefore urge the examiner to withdraw the drawing objections.

Specification and Claim Objections

These objections have been overcome by incorporating the examiner's changes in the specification and the claims.

§ 112 Rejection

The examiner rejected claims 1-11 under 35 U.S.C. §112, second paragraph, because 1) "belt-type" is indefinite, 2) "the housing inward side" lacks antecedent basis, 3) "the one shaft" lacks antecedent basis, 4) the meaning of "the first bearing mounting hole ..." is deemed unclear, and 5) "the cover" lacks antecedent basis. The claims have been amended to overcome these issues as follows.

First, the claims no longer recite "belt-type." This language has been removed from the claims as it is superfluous. Although this issue is moot, applicants submit that "belt-type" CVT is a term of art that is readily recognized by an ordinary artisan to mean to a CVT that uses a belt and equivalents thereof.

Second, the claims no longer recite "the housing inward side." Rather, this language has been reworded as --an inwardly facing side--.

Third, applicants submit that there is antecedent basis for the "the one shaft," which refers to the passage "one of the primary shaft and the secondary shaft."

Fourth, the examiner alleges that the passage "the first mounting hole is shorter than the first bearing ..." is confusing. This passage has been reworded (in claim 4) as --the depth of the

first bearing mounting hole, which extends in an axial direction of the primary shaft and the secondary shaft, is shorter than the thickness of the first bearing, which extends in the axial direction--. Similar changes have been made to claims 5-8.

Lastly, the word --second-- has been inserted before "cover" to provide clear antecedent basis.

Based on the foregoing changes, applicants submit that this rejection has been overcome and thus urge the examiner to withdraw this rejection.

Art Rejection

The examiner rejected claim 1 under 35 U.S.C. § 102(b) as anticipated by Neuman (USP 5,006,092). Applicants traverse this rejection because Neuman does not disclose or teach 1) the claimed first flange that extends from the inwardly facing side of the end wall and 2) the claimed bearing retainer, which cooperates with the first flange to pinch the first bearing, provided on the outside surface of the end wall.

First, claim 1 calls for a first flange that projects from an inside circumferential surface of the first bearing mounting hole and extends from an **inwardly** facing side of the housing end wall. In contrast, Neuman's first flange (formed in the blue section of the examiner's illustration) is on the **outwardly** facing side of the housing end wall.

Second, Claim 1 further calls for a bearing retainer that is provided on an outside surface of the housing end wall so as to project inwardly in a radial direction of the first bearing mounting hole and that cooperates with the first flange to pinch the first bearing. Newman's corresponding bearing retainer is merely threaded onto the end of the shaft. Neuman's bearing retainer thus does not engage the end wall at all. In this regard, the examiner alleges that Neuman's cover corresponds to the claimed bearing retainer. Neuman's cover, however, does not engage the bearing at all. Accordingly, it cannot pinch the first bearing. Neuman's cover thus does not correspond to the claimed bearing retainer.

Based on the foregoing differences, applicants submit that claim 1 patentably distinguishes over Neuman.

The examiner rejected claims 2-8, 10, and 11 under 35 U.S.C. § 103(a) as unpatentable over Neuman in view of Lamers (USP 5,334,108). Applicants traverse this rejection for the same reasons set forth above with respect to claim 1. Claims 2-8 depend from claim 1. Based on the dependency alone, applicants submit that these claims patentably distinguish over the applied references. Note that Lamers does not alleviate the shortcomings noted above with respect to claim 1.

Claims 2 and 10 also distinguish over the applied references because they do not teach the claimed elastically deformable urging member that contacts the **inwardly** facing side surface of a bearing. Indeed, Newman's urging member (marked in red in the examiner's illustration) is not elastically deformable. Moreover, Newman's urging member contacts the **outwardly** facing side surface of the bearing. Lamer's deformable urging member 22 does not contact the bearing. Instead, a member 24, which appears to be rigid, contacts the inwardly facing side surface of the bearing. So Lamers would not have alleviated Newman's shortcomings noted above. Accordingly, the combination would not have taught the claimed invention.

The examiner rejected claim 9 under § 103(a) as unpatentable over Neuman in view of Lamers and Hattori (USP 4,913,686). Applicants traverse this rejection for the same reasons set forth above with respect to claim 1. Claim 9 depends from claim 1. Based on the dependency alone, applicants submit that claim 9 patentably distinguish over the applied references. Note that Hattori does not alleviate Neuman's shortcomings noted above with respect to claim 1.

## Conclusion

Applicants submit that claims 1-11 patentably distinguish over the applied references for the reasons set forth above and thus urge the examiner to issue an early Notice of Allowance. Should the examiner have any issues concerning this reply or any other outstanding issues remaining in this application, applicants urge the examiner to contact the undersigned.

## Petition for Time Extension

Applicants request a one-month extension ($110) for replying to the outstanding Office Action. The Commissioner is authorized to charge the extension fee of $110 or any additional fees required to maintain the pendency of this application to Deposit Account No. 18-2056.

Respectfully submitted,

Date: June 28, 2002

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ATTACHMENT

MARKED UP VERSION

IN THE SPECIFICATION:

*Page 2, the last paragraph has been amended as follows:*

--Further, the bearing retainer 240 needs to be thick enough to allow formation of screw holes therein. The thick bearing retainer 240 causes the rolling bearing 220 to be bound strongly to the housing cover 200b, which is a factor of causing a phenomenon that the bearing 220 is deformed by thrust load from the pulley and the life of the transmission itself is shortened. To prevent such deformation of the bearing 220, it is necessary to make thinner the bearing retainer 240 that is in contact with the outer ring of the bearing 220 and thereby reduce its rigidity and hold the bearing 220 elastically with the bearing retainer 240. However, having a special sectional shape, such a bearing retainer 240 needs complex working and hence increases the cost.--

*Page 6, the third full paragraph has been amended as follows:*

--More specifically, the bearing 12 is fitted in an inside circumferential surface 54a of a bearing mounting hole 54 that is formed in the end wall 2a and through which the primary shaft 4 penetrates. The flange 52 projects from the inside circumferential surface 54a on the housing inward side, from an inwardly facing side of the end wall, toward the primary shaft 4 and thereby decreases the diameter of the bearing mounting hole 54 there. The flange 52 is integral with the end wall 2a. The flange 52 is engaged with the housing-inward-side (right side in Fig. 1) side surface, which is the inwardly facing side surface of the bearing 12, and cooperates with the bearing retainer 48 in the axial direction of the primary shaft 4 to pinch the outer ring 12b of the bearing 12.--

*Page 11, the third full paragraph has been amended as follows:*

--Prior to description of an assembling procedure, the following points are noted. The end wall 2a of the housing 2 has a first contact surface where the flange 52 is in contact with the bearing 12 and a second contact surface where the end wall 2a is contact with the cover 116 on the secondary shaft 84 side. The first contact surface and the second contact surface are reference surfaces P1 and P2, respectively. The distance between the reference surfaces P1 and P2 is determined accurately. Working is performed to form the bearing mounting holes 54 and 120 with the first contact surface and second contact surface used as references, respectively. Specifically, the bearing mounting hole 54 on the primary shaft 4 side is formed in such a manner that its depth $\underline{D}_1$ (i.e., the distance between the outside surface of a bearing support portion 55 of the end wall 2a and the reference surface P1) is slightly shorter than the width of the bearing 12. The bearing mounting hole 120 on the secondary shaft 84 side is formed in such a manner that its depth $\underline{D}_2$ (i.e., the distance between the reference surface P2 and the flange 122) is shorter than the width of the bearing 86 plus the thickness of the wave spring 118 in a free state.--

IN THE CLAIMS:

*Claims 1-11 have been amended as follows:*

--1. (Amended) A [belt-type] continuously variable transmission comprising:

a continuously variable transmission mechanism comprising:

a primary shaft having a primary pulley;

a secondary shaft having a secondary pulley; and

an endless belt wound on the primary pulley and the secondary pulley;

a housing that accommodates the continuously variable transmission mechanism, the housing having an end wall that is formed with a first bearing mounting hole through which one end portion of one of the primary shaft and the secondary shaft penetrates;

a first bearing that is fitted in the first bearing mounting hole and allows the one shaft to be supported rotatably by the end wall;

a first flange that projects from an inside circumferential surface of the first bearing mounting hole and extends from an [on the housing] inwardly facing side of the end wall;

a bearing retainer that is provided on an outside surface of the end wall so as to project inwardly in a radial direction of the first bearing mounting hole and that cooperates with the first flange to pinch the first bearing; and

a first cover that is connected to the housing and covers the one end portion of the one shaft and the bearing retainer.

2. (Amended) The [belt-type] continuously variable transmission according to claim 1, wherein the end wall is formed with a second bearing mounting hole through which one end portion of the other of the primary shaft and the secondary shaft penetrates, the belt-type continuously variable transmission further comprising:

a second bearing that is fitted in the second bearing mounting hole and allows the other shaft to be supported rotatably by the end wall;

an urging member that is in contact with an inwardly facing side surface of the second bearing, [on the housing inward side,] the urging member being elastically deformable in an axial direction of the primary shaft and the secondary shaft; and

a second cover that is connected to the housing[,] and covers the one end portion of the other shaft, and cooperates with the urging member to pinch the second bearing in the axial direction.

3. (Amended) The [belt-type] continuously variable transmission according to claim 2, wherein the primary shaft is positioned in the axial direction by the first bearing['s] contacting the first flange, and wherein the secondary shaft is positioned in the axial direction by the second bearing['s] contacting the second cover.

4. (Amended) The [belt-type] continuously variable transmission according to claim 1, wherein the depth of the first bearing mounting hole, which extends in an axial direction of the primary shaft and the secondary shaft, is shorter than the thickness of the first bearing, which extends in the axial direction, and wherein the first bearing receives urging force in a direction from the bearing retainer to the first flange and is thereby in contact with the first flange.

5. (Amended) The [belt-type] continuously variable transmission according to claim 2, wherein the depth of the first bearing mounting hole, which extends the axial direction, is shorter than the thickness of the first bearing, which extends in the axial direction, and wherein the first bearing receives urging force in a direction from the bearing retainer to the first flange and is thereby in contact with the first flange.

6. (Amended) The [belt-type] continuously variable transmission according to claim 3, wherein the depth of the first bearing mounting hole, which extends in the axial direction, is shorter than the thickness of the first bearing, which extends in the axial direction, and wherein the first bearing receives urging force in a direction from the bearing retainer to the first flange and is thereby in contact with the first flange.

7. (Amended) The [belt-type] continuously variable transmission according to claim 2, further comprising a second flange that projects from an inside circumferential surface of the second bearing mounting hole on the [housing] inwardly facing side, wherein:

the second cover is in contact with an outside surface of the end wall and a side surface of the second bearing in the same plane;

the depth of the second bearing mounting hole, which extends in the axial direction, is shorter[, in the axial direction,] than the combined thickness of the second bearing [plus] and the urging member that is not deformed elastically, which combined thickness extends in the axial direction; and

the second bearing receives urging force in a direction from the urging member to the second cover and is thereby in contact with the second cover.

8. (Amended) The [belt-type] continuously variable transmission according to claim 3, further comprising a second flange that projects from an inside circumferential surface of the second bearing mounting hole and from the [on the housing] inwardly facing side of the end wall, wherein:

the second cover is in contact with an outside surface of the end wall and a side surface of the second bearing in the same plane;

the depth of the second bearing mounting hole, which extends in the axial direction, is shorter[, in the axial direction,] than the combined thickness of the second bearing [plus] and the urging member that is not deformed elastically, which combined thickness extends in the axial direction; and

the second bearing receives urging force in a direction from the urging member to the second cover and is thereby in contact with the second cover.

9. (Amended) The [belt-type] continuously variable transmission according to claim 2, wherein each of the first and second covers has an oil passage through which operation oil is supplied to the continuously variable transmission mechanism.

10. (Amended) A [belt-type] continuously variable transmission comprising:

a continuously variable transmission mechanism comprising:

a primary shaft having a primary pulley;

a secondary shaft having a secondary pulley; and

an endless belt wound on the primary pulley and the secondary pulley;

a housing that accommodates the continuously variable transmission mechanism, the housing having an end wall that is formed with a bearing mounting hole through which one end portion of one of the primary shaft and the secondary shaft penetrates;

a bearing that is fitted in the bearing mounting hole and allows the one shaft to be supported rotatably by the end wall;

an urging member that is in contact with an inwardly facing side surface of the bearing, [on the housing inward side,] the urging member being elastically deformable in an axial direction of the one shaft; and

a cover that is connected to the housing[,] and covers the one end portion of the one shaft, and cooperates with the urging member to pinch the bearing in the axial direction.

11. (Amended) The [belt-type] continuously variable transmission according to claim 10, further comprising a flange that projects from an inside circumferential surface of the bearing mounting hole, from an [on the housing] inwardly facing side of the end wall, the flange supporting [and supports] the urging member [on the housing] from the inwardly facing side, wherein the urging member is disposed between the flange and the bearing.--